

551.515 (73)

## STORMS AND WEATHER WARNINGS

## WASHINGTON FORECAST DISTRICT

On the morning of the 1st, southwest storm warnings were ordered from Delaware Breakwater to Eastport. On the 2d northwest storm warnings were ordered from Delaware Breakwater to Hatteras. From Delaware Breakwater to Eastport, warnings were changed to northwest on the 2d and continued on the 3d. Strong winds and gales occurred. Small-craft warnings were displayed on the 6th from Miami to Charleston and on the Alabama and extreme northwest Florida coasts, and fresh winds occurred. Southwest warnings were ordered on the morning of the 7th from Cape Hatteras to Portland and were extended northward to Eastport on the evening of that date. On the following morning the warnings were changed to northwest. Strong winds and gales occurred as indicated. On the morning of the 9th small-craft warnings were ordered from Eastport to Hatteras and fresh to strong winds occurred.

On the morning of the 10th small-craft warnings were ordered from Mobile to Apalachicola and fresh to strong winds occurred during the afternoon. On the 11th small-craft warnings were displayed from Atlantic City to Jacksonville.

Small-craft warnings were issued on the 23d from Hatteras to Boston and fresh winds occurred.

On the morning of the 25th storm warnings were displayed from Hatteras to Portland, in connection with a disturbance over northern New York, and on the following morning warnings were ordered from Jacksonville to Boston in connection with a disturbance of considerable intensity over North Carolina. Strong winds occurred generally, but were not severe.

With centers of disturbances over the Rio Grande Valley on the evening of the 29th, storm warnings were displayed between Bay St. Louis, Miss., and Tampa, Fla.

On the afternoon of the 30th storm warnings were ordered from Titusville, Fla., to Atlantic City, N. J., and on the evening of that date were extended northward to Boston. Strong winds and gales occurred generally over the region of display.

Warnings of frosts or freezing temperatures were issued for portions of the South Atlantic and East Gulf States on the 2d, 3d, 7th, 8th, 9th, 12th, 13th, 15th, 16th, 23d, 25th, 26th, 27th, 30th, and 31st. The frosts and freezing temperatures that occurred on the 14th were the most important of the month, minimum temperatures from 2° to 4° below freezing being reported as far south as the East Gulf coast and northern Florida, considerable damage to fruit blossoms resulting.—*R. H. Weightman.*

## CHICAGO FORECAST DISTRICT

The weather was unusually cold for the season in the Great Lakes region and the Mississippi and Ohio and lower Missouri valleys. The storms passed across the southern and eastern portions of the district in rapid succession, bringing large falls of snow to the Great Lakes region and portions of the Southwest. Record-breaking snowfall for the month of March was registered at several stations. The precipitation was seldom in the form of rain, except in the extreme southern portion of the forecast district. On the other hand, the temperature was mild and precipitation deficient in the northern plains.

The month opened with a disturbance passing across the Great Lakes, accompanied by snow and strong winds. Later a disturbance gradually developed in the west, and passed eastward across middle districts with steadily

increasing intensity. On the 6th and 7th, precipitation was widespread, and the accompanying winds were rather strong, with falling temperature following in the wake of the disturbance. Advisory messages were sent to open ports on Lake Michigan in the interests of navigation, and cold-wave warnings were issued for a considerable portion of the district.

Another storm immediately developed in the southwest, and passing eastward it skirted the southern portion of the Chicago forecast district on the 10th and 11th, accompanied by extensive rain and snow.

Disturbances of lesser importance passed across the district in rapid succession during the following two weeks, causing a continuation of the unsettled conditions in much of the forecast district, chiefly from the Great Lakes southward and southwestward to the limits of the region.

One of the most important storms was a combination, apparently, of two disturbances—one from the northwest and another from the southwest—which joined together in a well-marked low over the upper Mississippi Valley on the morning of March 24. The center passed directly eastward across the Great Lakes, with some snow and strong northwest winds, followed by a marked fall in temperature. The usual advisory warnings were issued to open ports of Lake Michigan.

The weather continued unsettled and stormy, and on the morning of the 28th a well-marked storm appeared to be developing in the far Southwest, and this passed first east-southeastward across the west Gulf States and then turned northeastward by the morning of the 30th from the lower Missouri Valley across the Ohio Valley and Great Lakes Region. The storm was most unusual for the season, because of its record-breaking snowfall over a wide area. The accompanying winds, moreover, drifted the snow badly and transportation was much affected. Warnings of severe weather conditions were broadcast. The pressure at the center of this storm as it passed over the southern Lake Region fell to 29 inches or lower.—*H. J. Cox.*

## NEW ORLEANS FORECAST DISTRICT

Storm warnings were issued for parts of the Texas coast on March 25, 29, and 30, and small-craft warnings for parts of the west Gulf coast on the 7th, 24th, 25th, and 30th; subsequent conditions justified these warnings.

Cold-wave warnings were issued for Oklahoma on the 5th, and a cold wave occurred. Frost or freezing temperatures occurred in parts of the district on several dates, for which timely warnings were issued. Livestock warnings for snows or hard freeze were issued for the northern portion of the district on the 26th, 28th, 29th, and 30th, and there was heavy snow with hard freeze. No severe weather occurred without warning.—*I. M. Cline.*

## DENVER FORECAST DISTRICT

Low pressures prevailed over the southern and extreme western portions of the district during most of the month, with frequent LOWs also moving eastward along the northwestern border. The succeeding northwestern HIGHS, however, were without their usual intensity. As results of these pressure conditions, temperatures were generally much above normal in the extreme northern and western portions of the district, with a marked deficiency in precipitation. In southeastern Wyoming, eastern Colorado and New Mexico there was an excess of precipitation, attended by temperatures generally below the seasonal average.

Aside from a local cold wave at Flagstaff, Ariz., on the 11th, the only cold wave of the month occurred in eastern New Mexico on the 29th and 30th, when a low which was central over northeastern Arizona on the morning of the 29th divided, one center advancing rapidly to extreme southern Texas, the other remaining over southwestern Colorado. Cold wave warnings were not issued, but warnings of colder in New Mexico, with frost or freezing temperature, were distributed on the morning of the 29th.

Warnings of frost or freezing temperature which were generally verified were issued for portions of the whole of New Mexico, on the 6th, 7th, 8th, 10th, 11th, 12th, 15th, 21st, 24th, 25th, 26th, 27th, 28th, 29th, 30th, and 31st; for south-central and southeastern Arizona on the 11th, 21st and 29th, and for the valleys of western Colorado on the 21st, 22nd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, and 31st.—*J. M. Sherier.*

#### SAN FRANCISCO FORECAST DISTRICT

The month of March gave exceptionally high temperatures over all parts of the forecast district. At many stations in California the month was the warmest March of record and at some stations in the State it was both the warmest and driest March of record. Only one frost warning was required for California, but warnings of frosts and of freezing temperatures were issued on a number of days for Nevada, Idaho, Washington and Oregon, because high temperatures during March and the previous months forced vegetation to advance far beyond what it normally does at this season. The few storm warnings were restricted to the coast north of Cape Blanco; i. e., the Washington and Oregon coasts.

Among the outstanding facts noted in regard to the past winter are these: (1) No cold-wave warning was issued or necessary for any part of this forecast district and (2) the periods of general rains in California have followed in all instances the disintegration of the area of high pressure that normally is central some distance off the California coast. A notable instance of this occurred during the latter part of January. The barometer had stood high off our coast and the weather consequently remained dry during the time. Rains were general and heavy in the State while the barometer stood low over the region where it is normally high and ceased quickly after the pressure rose above normal. A similar instance occurred after the end of March. This will be referred to in the report for the month of April.—*E. H. Bowie*

627.41 (73)

#### RIVERS AND FLOODS

By H. C. FRANKENFIELD

The great ice gorge that had prevailed since January 8 in the Allegheny River of Pennsylvania gave way and passed down the river during the early evening of March 23. A special report on this gorge appears on page 106 in this REVIEW.

Moderate floods occurred during March in the rivers of the Southern States, except the lower Mississippi, the Illinois, and Wabash Rivers and their tributaries, the Grand and Saginaw systems of Michigan, and portions of the Maumee system of Ohio. There were also moderate local floods in the Sabine, Trinity, and Little Rivers of Texas. All of the floods were relatively unimportant, although only absence of heavy rains prevented a decided flood in the rivers of southern lower Michigan and northern Ohio. As it was, the melting of snow and ice

due to the high temperatures of the last decade of the month caused only moderate flood stages, and the losses were very small, although many business interests suffered considerable inconvenience for a short time.

Warnings of the floods were ample, and the aggregate losses were very small. The totals reported for the large territory east of the Mississippi River were only \$32,900, while those from the Texas floods were \$54,000, with a reported saving through the warnings of \$52,500.

The ice in the Missouri River in the vicinity of Bismarck broke up on March 21 and 22 and passed down the river with little damage. Ample warning of the event was issued. The crest stage at Bismarck was 14.6 feet, 0.4 foot below the flood stage.

In New England and eastern New York there was still on the ground an unusual amount of snow with a large water equivalent, excellent potential flood conditions which a few weeks later were resolved into actual ones of which mention will be made hereafter.

Owing to the comparative mildness of the last three consecutive winters the Connecticut River below East Hartford bridge has been continuously kept open for navigation, although on a few occasions the use of tugs was resorted to in order to maintain an open channel.

#### Flood stages during month of March, 1926

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC DRAINAGE					
	<i>Feet</i>			<i>Feet</i>	
Susquehanna: Oneonta, N. Y.	12	26	26	12.2	26
Neuse: Smithfield, N. C.	14	15	15	14.0	15
Peedee: Mars Bluff, S. C.	17	1	2	17.7	1 and 2
		16	16	17.0	16
Santee:					
Rimini, S. C.	12	(1)	21	14.7	2 and 4
Ferguson, S. C.	12	(1)	22	13.5	3
Oconee: Milledgeville, Ga.	22	31	(2)	22.3	31
Ocmulgee:					
Macon, Ga.	18	31	(2)	20.0	31
Abbeville, Ga.	11	4	6	11.3	5
Altamaha: Everett City, Ga.	10	3	8	10.1	4, 5, 6
		11	15	10.0	11 to 15
EAST GULF DRAINAGE					
Chattahoochee: Columbus, Ga.	20	31	(2)	20.0	31
Tombigbee: Lock No. 4, Demopolis, Ala.	39	11	18	43.9	15
Pearl:					
Jackson, Miss.	20	10	23	27.0	16, 17, 18
Columbia, Miss.	18	23	26	19.0	25
West Pearl: Pearl River, La.	13	14	(2)	15.7	27
GREAT LAKES DRAINAGE					
Maumee: Napoleon, Ohio.	10	(1)	(1)	13.6	Feb. 27
St. Joseph: Montpelier, Ohio.	10	(1)	1	12.4	Feb. 27
		24	24	10.0	Mar. 24
Saginaw: Saginaw, Mich.	19	25	28	20.1	26
Shiawassee: Chesaning, Mich.	17	23	23	17.3	23
Flint: Flint, Mich.	11	23	27	13.9	25
Pine: Alma, Mich.	7	22	26	7.5	23
Cass: Vassar, Mich.	14	22	26	15.6	24
Grand:					
Eaton Rapids, Mich.	5	(1)	3	5.3	1
		20	31	5.7	26
Lansing, Mich.	11	21	24	11.4	22
Grand Ledge, Mich.	7	(1)	3	8.4	2
		7	7	7.0	7
		19	26	9.0	21-22
Lowell, Mich.	15	24	24	15.0	24
Grand Rapids, Mich.	11	22	29	13.3	25
Red Cedar:					
Williamston, Mich.	6	2	2	6.0	2
		20	25	8.5	20
East Lansing, Mich.	8	20	26	9.7	20
MISSISSIPPI DRAINAGE					
Allegheny: Franklin, Pa.	15	(1)	5	24.0	Feb. 26
		8	8	15.2	Mar. 8
		21	23	20.6	22
Shenango: Sharon, Pa.	9	25	25	9.2	25
Tuscarawas:					
Gnadenhutten, Ohio.	9	(1)	1	13.5	Feb. 27
		24	25	9.7	Mar. 24
Coshocton, Ohio.	8	(1)	(2)	10.6	Feb. 27

1 Continued from last month.  
2 Continued at end of month.

\* Below flood stage, 8 a. m., Mar. 1.  
• Ice gorge.